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November 24, 2003

## **VIA ELECTRONIC SUBMISSION**

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12th Street, S.W.  
Washington, DC 20554

Re: **NOTICE OF *EX PARTE* MEETING**  
CC Docket No. 94-102  
RM-8143  
Compatibility with Enhanced 911 Emergency Calling Systems

Dear Ms. Dortch:

On November 21, 2003, George Marble of Andrew Corporation ("Andrew") and I had an *ex parte* meeting with the Policy Division of the Wireless Telecommunications Bureau (the "Bureau"). Representing the Bureau were Eugenie Barton, Patrick Forster, Thomas P. Stanley and Peter Trachtenberg. Andrew is the manufacturer of the network-based Geometrix® Wireless Location System.

We discussed the deployment of wireless E911 Phase II in rural areas. We mentioned specific examples of the many rural wireless systems where Andrew has successfully installed Geometrix® systems that meet or better the Commission's accuracy standards for network-based location technologies. These systems were deployed in accordance with Andrew's recommended system designs. We also explained that, in the few cases where the carrier elected to install according to the carrier's own criteria designs that in Andrew's judgment would not achieve E911 Phase II compliance, Andrew informed the carrier in advance of deployment that the system was unlikely to achieve compliant coverage and performance.

Andrew bases its performance projections and preliminary system designs upon the carrier's specific cell site locations and antenna configurations, the topology and morphology of the area to be served, and the known characteristics of the Geometrix® system. Andrew has provided to customer and non-customer carriers at no charge dozens of preliminary designs,

accuracy projections and cost estimates for Geometrix® systems. Andrew will continue to provide such projections to carriers that request them. Because of the unique operational characteristics of the Geometrix® system, a carrier cannot correctly assume that the receiving attributes of its networks are similar to those of the Geometrix® system. In fact, the Geometrix® receivers for location determination purposes are much more sensitive than the carrier's receivers for communications purposes. Without detailed projections, a carrier can only guess, in most cases incorrectly, as to whether a Geometrix® overlay would satisfy the Commission's E911 Phase II accuracy standards. The Geometrix® system can meet the Phase II accuracy standards using a much weaker signal (often 20 dB or more weaker) than can be used by the wireless network itself. In this manner the Geometrix® system very often can usefully measure signals at multiple cell sites sufficient to establish caller locations, even when the caller's signal is "visible" to the carrier's equipment at only one site for communications purposes. In a number of instances, the cell sites need not even be within handoff distance of each other for the Geomtrix® system to perform accurately.

We explained that in many instances, Time Difference of Arrival ("TDOA") only systems are sufficient to meet the Commission's accuracy standards in rural areas. In other instances selected cell sites need to be supplemented with Angle of Arrival ("AOA"). When AOA is required, Andrew will recommend AOA for only a carefully selected minimum number of sites needed to satisfy the accuracy standards. AOA is sometimes needed only when there is a combination of significant distances between cell sites, challenging cell site geometry, and rugged terrain. However, to determine whether a TDOA-only system is sufficient, whether AOA is needed at some sites, or whether a network-based location system is not feasible, Andrew must be asked to make detailed location system performance projections. For example, we explained that Andrew was able to provide a system design to one potential customer with a wireless system in a mountainous rural area in the west where a TDOA-only Geometrix® system would meet the Commission's accuracy standards. Although one would intuitively expect that such a system would be difficult to design and require significant use of AOA, after running the projections, it became apparent that the cell sites were well placed in high areas that provided for long reception distances and little terrain blockage of signals. Therefore, the projections did not require any use of AOA. As mentioned earlier, Andrew will provide system design accuracy projections at no charge.

Lastly, the Bureau representatives noted that Andrew's system design accuracy projections were subject to non-disclosure agreements and asked whether Andrew would be willing to permit its customers to submit such projections to the Commission. We explained that any carrier can ask Andrew for consent to submit the projections to the Commission, and that Andrew would promptly respond to any such requests.

Very truly yours,

Eliot J. Greenwald

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November 24, 2003  
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Cc (by e-mail):      Eugenie Barton  
                         Patrick Forster  
                         Thomas P. Stanley  
                         Peter Trachtenberg  
                         George Marble